

**2007 REPORT ON
ENERGY CONSERVATION BY
STATE AGENCIES
Executive Order 48**



**Submitted by the Department of Mines, Minerals and Energy
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TABLE OF CONTENTS

| | |
|---|----------|
| Summary..... | 1 |
| Energy Cost Reduction FY2006-FY2007..... | 2 |
| Agency EO-48 Report..... | 3 |

Summary

Executive Order 48 (EO-48) states that “the Department of Mines, Minerals and Energy (DMME) shall maintain a system to monitor and report on progress made by state agencies toward reducing from its 2006 baseline energy costs and consumption for state-owned facilities, and provide a report at least annually on its website.” DMME has coordinated with Agency Energy Managers (AEM’s) in obtaining FY 2007 energy cost data. To assist AEM’s with reporting energy costs in their facilities, an Excel spreadsheet was developed and made available to state agencies to report their associated energy costs.

Of the 154 state agencies, 90 are located in state owned facilities, while the remaining 64 are housed in leased office space and not required to report. Of the 90 agencies in state owned facilities 38 have reported progress toward meeting their energy cost reduction goals. These agencies cumulatively have avoided energy costs of over \$7.5 million, this is approximately 23% of the 2010 energy cost avoidance goal of 32 million dollars.

In addition to reporting and tracking energy costs by agency, DMME in coordination with the Department of Environmental Quality (DEQ), is also calculating a reduction in greenhouse gas emissions, in the form of carbon dioxide (CO₂) based on the reported energy savings. The tables on page three and four show an agency’s energy cost reduction goal, progress toward achieving that goal, and the CO₂ greenhouse gas avoidance. To date, agencies have avoided over 192 million pounds of greenhouse gas emissions as a result of the energy efficiency improvements taking place across all Commonwealth state-owned facilities.

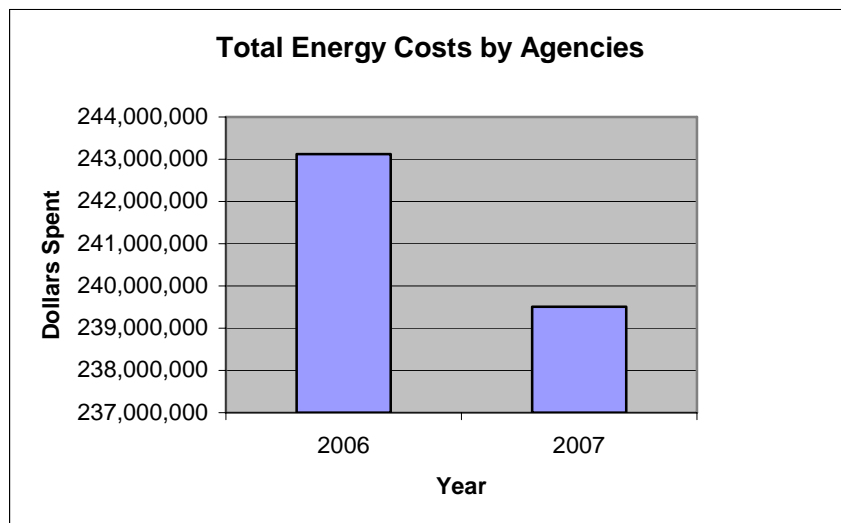
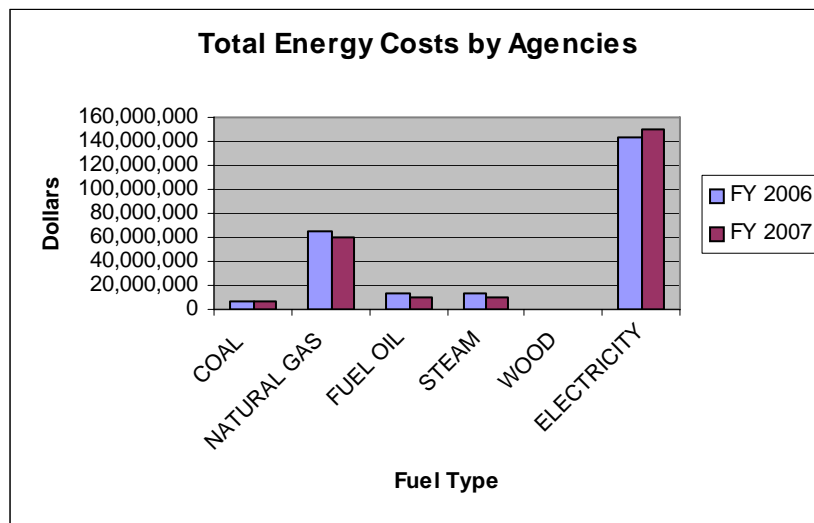
Reports submitted by Agencies show significant energy cost reductions are being achieved. Some agencies have shown less energy cost reductions over the reporting period, possibly due to aggressive energy conservation efforts in years prior to the start of the reporting period, construction of energy intensive spaces, such as laboratory space, and building lower first cost buildings with high operating energy usage have increased energy consumption in some agencies.

Energy Cost for FY2006 & FY2007 for all agencies based on Department of Accounts Reports

| | COAL | NATURAL GAS | HEATING OIL | STEAM | WOOD | ELECTRICITY | Grand Total |
|------------------------|----------------|-------------------|-------------------|-------------------|----------------|------------------|-------------------|
| FY 2006 | 6,067,624 | 65,549,888 | 14,104,367 | 13,473,297 | 426,177 | 143,502,979 | 243,124,331 |
| FY 2007 | 6,779,842 | 60,765,473 | 10,759,529 | 10,731,780 | 412,903 | 150,056,591 | 239,506,118 |
| Cost Difference | 712,217 | -4,784,414 | -3,344,837 | -2,741,517 | -13,274 | 6,553,612 | -3,618,213 |

Notes:

1. Weather was not a significant factor in energy costs changes between the FY06 and FY07 reporting period.
2. Electric rate increases overwhelmed the avoided cost for electricity in FY07.
3. Natural gas saw reduced commodity prices while heating oil saw increased commodity prices from FY06 to FY07.
4. Natural gas, heating oil, and steam benefited from improved procurement methods and efficiency.



EO-48 Report by Agency

| Agency # | AGENCY | FY06 ENERGY COSTS* | EO48 GOAL* | FY07 Conventional Fuel Cost Reduction | % of Goal Met | Greenhouse Gas Emissions Avoided (lbs of CO ₂)** |
|----------|---|--------------------|-------------|---------------------------------------|---------------|--|
| 291 | Blue Ridge Community College | \$214,267 | \$32,140 | \$0 | 0% | - |
| 724 | Catawba Hospital | \$529,859 | \$105,972 | \$12,148 | 11% | 301,999 |
| 292 | Central Virginia Community College | \$375,605 | \$75,121 | \$12,385 | 16% | 307,891 |
| 707 | Central Virginia Training Center | \$2,262,297 | \$452,459 | \$68,986 | 15% | 1,714,992 |
| 242 | Christopher Newport University | \$2,520,609 | \$504,122 | \$0 | 0% | - |
| 204 | College of William & Mary | \$6,436,561 | \$1,287,312 | \$600,500 | 47% | 14,928,430 |
| 287 | Dabney S. Lancaster Community College | \$191,062 | \$38,212 | \$0 | 0% | - |
| 279 | Danville Community College | \$382,269 | \$57,340 | \$59,809 | 104% | 1,486,852 |
| 301 | Department of Agriculture & Consumer Svcs | \$243,296 | \$48,659 | \$0 | 0% | - |
| 999 | Department of Alcoholic Beverage Control | \$1,836,230 | \$275,435 | \$0 | 0% | - |
| 841 | Department of Aviation | \$29,400 | \$4,410 | \$0 | 0% | - |
| 199 | Department of Conservation and Recreation | \$1,056,964 | \$211,393 | \$0 | 0% | - |
| 701 | Department of Corrections | \$20,828,009 | \$3,124,201 | \$271,193 | 9% | 6,741,863 |
| 140 | Department of Criminal Justice Services | \$661,306 | \$132,261 | - | - | - |
| 778 | Department of Forensic Science | \$1,152,769 | \$230,554 | \$0 | 0% | - |
| 411 | Department of Forestry | \$297,383 | \$44,607 | \$0 | 0% | - |
| 403 | Department of Game and Inland Fisheries | \$371,878 | \$74,376 | \$0 | 0% | - |
| 194 | Department of General Services | \$7,775,415 | \$1,166,312 | \$6,783 | 1% | 168,625 |
| 777 | Department of Juvenile Justice | \$1,970,004 | \$394,001 | \$0 | 0% | - |
| 123 | Department of Military Affairs | \$737,760 | \$147,552 | \$9,561 | 6% | 237,686 |
| 409 | Department of Mines, Minerals and Energy | \$52,695 | \$7,904 | \$3,705 | 47% | 92,106 |
| 154 | Department of Motor Vehicles | \$1,560,677 | \$312,135 | \$10,593 | 3% | 263,342 |
| 156 | Department of State Police | \$1,244,666 | \$248,933 | \$0 | 0% | - |
| 702 | Department of the Blind and Vision Impaired | \$224,807 | \$44,961 | \$0 | 0% | - |
| 501 | Department of Transportation | \$12,859,852 | \$2,571,970 | \$0 | 0% | - |
| 912 | Department of Veterans Services | \$385,195 | \$77,039 | \$0 | 0% | - |
| 284 | Eastern Shore Community College | \$73,565 | \$14,713 | - | - | - |
| 704 | Eastern State Hospital | \$1,897,531 | \$284,630 | - | - | - |
| 239 | Frontier Culture Museum | \$33,195 | \$4,979 | \$0 | 0% | - |
| 247 | George Mason University | \$7,921,629 | \$1,188,244 | \$873,640 | 74% | 21,718,690 |
| 297 | Germanna Community College | \$405,316 | \$60,797 | \$0 | 0% | - |
| 417 | Gunston Hall Plantation | \$76,820 | \$15,364 | - | - | - |
| 283 | J. Sargeant Reynolds Community College | \$733,520 | \$146,704 | \$3,321 | 2% | 82,560 |
| 216 | James Madison University | \$15,563,753 | \$2,334,563 | \$353,506 | 15% | 8,788,158 |
| 425 | Jamestown-Yorktown Foundation | \$609,649 | \$121,930 | \$0 | 0% | - |
| 290 | John Tyler Community College | \$450,611 | \$90,122 | \$51,755 | 57% | 1,286,629 |
| 214 | Longwood University | \$1,329,998 | \$266,000 | \$33,848 | 13% | 841,461 |
| 298 | Lord Fairfax Community College | \$287,274 | \$57,455 | \$2,994 | 5% | 74,431 |
| 299 | Mountain Empire Community College | \$166,109 | \$33,222 | \$0 | 0% | - |
| 275 | New River Community College | \$383,290 | \$57,494 | - | - | - |
| 213 | Norfolk State University | \$2,488,230 | \$373,235 | \$219,367 | 59% | 5,453,464 |
| 280 | Northern Virginia Community College | \$2,394,098 | \$359,115 | \$88,760 | 25% | 2,206,574 |
| 728 | Northern Virginia Mental Health Institute | \$273,975 | \$54,795 | - | - | - |
| 725 | Northern Virginia Training Center | \$481,320 | \$96,264 | \$0 | 0% | - |
| 221 | Old Dominion University | \$4,795,362 | \$719,304 | \$179,204 | 25% | 4,508,041 |
| 285 | Patrick Henry Community College | \$297,350 | \$44,603 | \$65,140 | 146% | 1,619,380 |
| 277 | Paul D. Camp Community College | \$207,158 | \$41,432 | \$0 | 0% | - |
| 729 | Piedmont Geriatric Hospital | \$366,522 | \$73,304 | \$275,778 | 376% | 3,055,948 |
| 282 | Piedmont Virginia Community College | \$325,802 | \$65,160 | \$0 | 0% | - |

EO-48 Report by Agency

| Agency # | AGENCY | FY06 ENERGY COSTS* | EO48 GOAL* | FY07 Conventional Fuel Cost Reduction | % of Goal Met | Greenhouse Gas Emissions Avoided (lbs of CO ₂)** |
|----------|--|--------------------|--------------|--|---------------|--|
| 217 | Radford University | \$3,570,619 | \$714,124 | \$52,449 | 7% | 1,303,882 |
| 278 | Rappahannock Community College | \$183,827 | \$36,765 | - | - | - |
| 241 | Richard Bland College | \$189,512 | \$28,427 | \$0 | 0% | - |
| 146 | Science Museum of Virginia | \$370,365 | \$55,555 | \$6,270 | 11% | 155,872 |
| 723 | Southeastern Virginia Training Center | \$408,495 | \$81,699 | \$1,826 | 2% | 45,394 |
| 739 | Southern Virginia Mental Health Institute | \$181,814 | \$36,363 | - | - | - |
| 276 | Southside Virginia Community College | \$192,957 | \$38,591 | \$6,900 | 18% | 171,534 |
| 726 | Southside Virginia Training Center | \$3,505,660 | \$701,132 | \$1,050,583 | 150% | 26,117,493 |
| 294 | Southwest Virginia Community College | \$362,625 | \$54,394 | \$0 | 0% | - |
| 948 | Southwest Virginia Higher Education Ctr | \$121,840 | \$18,276 | \$43,255 | 237% | 1,075,319 |
| 705 | Southwestern Virginia Mental Health Institute | \$629,518 | \$125,904 | \$144,970 | 115% | 12,633,582 |
| 738 | Southwestern Virginia Training Center | \$427,679 | \$85,536 | \$143,367 | 168% | 3,564,104 |
| 293 | Thomas Nelson Community College | \$478,925 | \$95,785 | \$105,999 | 111% | 2,635,135 |
| 295 | Tidewater Community College | \$1,724,113 | \$344,823 | - | - | - |
| 215 | University of Mary Washington | \$2,885,381 | \$577,076 | \$300,319 | 52% | 7,465,939 |
| 207 | University of Virginia | \$26,119,071 | \$5,223,814 | \$1,396,056 | 27% | 34,705,952 |
| 236 | Virginia Commonwealth University | \$8,119,101 | \$1,623,820 | \$298,538 | 18% | 7,421,644 |
| 182 | Virginia Employment Commission | \$813,352 | \$162,670 | \$0 | 0% | - |
| 296 | Virginia Highlands Community College | \$171,867 | \$34,373 | \$33,477 | 97% | 832,238 |
| 268 | Virginia Institute of Marine Science | \$789,492 | \$157,898 | \$0 | 0% | - |
| 211 | Virginia Military Institute | \$2,021,910 | \$303,287 | \$0 | 0% | - |
| 238 | Virginia Museum of Fine Arts | \$873,581 | \$131,037 | \$0 | 0% | - |
| 942 | Virginia Museum of Natural History | \$24,981 | \$3,747 | \$0 | 0% | - |
| 766 | Virginia Parole Board | \$698,389 | \$139,678 | - | - | - |
| 218 | Virginia School for the Deaf & Blind | \$270,777 | \$40,617 | \$45,390 | 112% | 1,128,395 |
| 219 | Virginia School for the Deaf, Blind, & Multiple Disabled | \$221,826 | \$33,274 | \$0 | 0% | - |
| 212 | Virginia State University | \$2,568,180 | \$385,227 | \$218,631 | 57% | 5,435,167 |
| 208 | Virginia Tech | \$15,400,000 | \$2,310,000 | \$28,466 | 1% | 707,665 |
| 286 | Virginia Western Community College | \$572,057 | \$85,809 | \$0 | 0% | - |
| 706 | Western State Hospital | \$1,198,891 | \$179,834 | \$40,000 | 22% | 994,400 |
| 203 | Woodrow Wilson Rehabilitation Ctr | \$859,015 | \$171,803 | \$133,269 | 78% | 3,390,130 |
| 288 | Wytheville Community College | \$258,219 | \$51,644 | \$0 | 0% | - |
| | | | | | | |
| | TOTALS | \$183,976,951 | \$32,205,792 | \$7,531,268 | 23% | 192,587,141 |
| | | | | Metric Tons of Carbon Equivalent (MTCE): | | 87,357 |

* Data based on reports from the Department of Accounts and DMME's Energy Tracker Database

** CO₂ calculation derived from the Department of Environmental Quality

Factors used for calculations:

Natural Gas (therms) - ave. cost FY07: \$11.78/therm
 Heating Oil - ave cost FY07: \$2.02/gal
 Electricity (kWh) - ave. cost FY07: .05/kWh

| Carbon Emission Conversion Factors | |
|------------------------------------|---------------------------------|
| Fuel Type | Pounds CO ₂ per Unit |
| Natural Gas | 120.593/1000 ft ³ |
| Fuel Oil | 22.384/gal |
| Electricity | 1.243lbs/kWh |

Note to Agencies: Agencies located in leased office space are exempt from reporting; therefore are not listed here.